

Proposed Land Management

Preferred Alternative

The Peshtigo River State Forest has been divided into seven land management areas: two forest production areas and five native community areas. Each management area describes a unique landscape or management focus that considers soils, topography, community type, and other factors which shape the recommended management for each area. The Peshtigo River State Forest is comprised largely of species that tolerate the nutrient poor, well drained sandy soils. Scrub oak and aspen are the most common species on much of the forest, but some higher quality oak stands occur on more mesic soils. Lowland areas on the forest are uncommon, but support cedar, spruce, and fir. Unique to this area are a number of rock outcroppings, bedrock glades, forested seeps, and the Peshtigo River, which lends a unique scenic quality to the forest.

Trends and Issues

A variety of trends and issues influence master planning and forest management decisions. On the Peshtigo River State Forest, some of the important trends and issues are:

- Habitat fragmentation due to the parcelization of forest land. While this trend is common throughout the region and the state, development pressures are increasing in the area.
- Oak is declining statewide and there is poor regeneration/recruitment.
- Jack pine is declining statewide and locally due to a variety of factors such as lack of fire, poor regeneration, and reduced recruitment in smaller class sizes. This species is highly desirable as a forest commodity in addition to providing wildlife habitat.
- Forest health: much of the harvestable timber on the forest is well past the optimal rotation age and is in decline. As a result, it is susceptible to disease and insect damage, such as white trunk rot in aspen and gypsy moths that prefer oak and aspen. Oak wilt threatens oak stands of all ages. Poor forest health can also lead to natural regeneration difficulties in some species such as oak, aspen, and Jack pine. Dead and dying trees are found in many areas of the forest.
- Soils on the Peshtigo River State Forest are primarily sandy and nutrient poor resulting in low forest productivity and limited tree species diversity.

Opportunities and Limitations

There are several factors limiting forest management on the Peshtigo River State Forest. The first limitation is the size and shape of the property. Because of the linear nature of the property and private land adjacent to it, most land management activities will be highly visible from roads, trails, and private land. Every effort will be made to prevent or limit the view of management activities from the water. Forest aesthetics will be a primary concern as management activities are carried out. Another limitation is the nutrient poor sandy soils. While these soils are well suited for supporting dry forest communities and pine barrens, which are under-represented statewide, they do not support highly productive forests. The numerous stands of scrub oak are not nearly as productive as the less common pine plantations. This presents an opportunity to increase forest productivity by converting some scrub oak acreage to pine, while managing for

uncommon communities and species. However, the areas where this conversion can take place are limited by aesthetic and other concerns.

The Forest is located in an area and region with abundant public lands. Specifically, the forest could potentially provide a virtually uninterrupted link between the Chequamegon-Nicolet National Forest and Marinette County forest lands. A corridor of this nature would provide innumerable ecological benefits as well as expanding recreational opportunities. And lastly, the Peshtigo River and flowages, which are the defining features of this property, provide a number of ecological, recreational, and aesthetic benefits. Enhancing and protecting the riparian habitat is an important goal of the forest.

Land Management Objectives

Below are broad management objectives for both Forest Production Areas and Native Community Areas. The preferred alternative contains specific management objectives for each area. Both management classifications are subject to the Federal Energy Regulatory Commission's 200 foot buffer zone along the river and flowages. Forest management activities in the Federal Energy Regulatory Commission buffer zone are limited to insure scenic and aesthetic qualities of the riparian area. More than 1000 acres of forest land around the flowages is in the Federal Energy Regulatory Commission buffer zone.

Forest Production Management Areas

- Sustainably produce timber and other forest products.
- Maintain and enhance scenic qualities of the Peshtigo River and flowages.
- Protect, maintain, and improve the water quality and riparian habitat.
- Increase white, jack and red pine where suitable.
- Maintain a diversity of forest types and ages for forest health, aesthetic appeal, and wildlife habitat.

Native Community Management Areas

- Restore and maintain native plant and animal communities, and other aspects of native biological diversity.
- Maintain a mosaic of rare or representative community types that include older closed canopy forests of longer lived species, such as pines (on the uplands) and northern white cedar (on the lowlands), as well as an undeveloped lake and other unique attributes such as forested seeps and bedrock glades.
- Maintain a diversity of forested and unforested wetlands where suitable.
- Maintain, protect and enhance water quality, including coarse woody habitat.
- Protect rare species habitats and rare natural communities.
- Provide for research, education and ecological interpretation.

Highlights of the Land Management Preferred Alternative

The forest has been divided into two management classifications: two forest production land management areas and five native community land management areas. Detailed summaries of each area are listed below.

Forest Production Land Management Classification

Area 1: Peshtigo River Flowages	6,095 acres
Area 2: Fly Fishing Area	1,983 acres

Native Community Land Management Classification

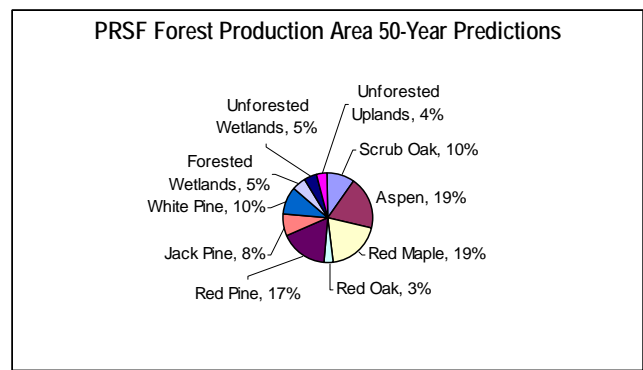
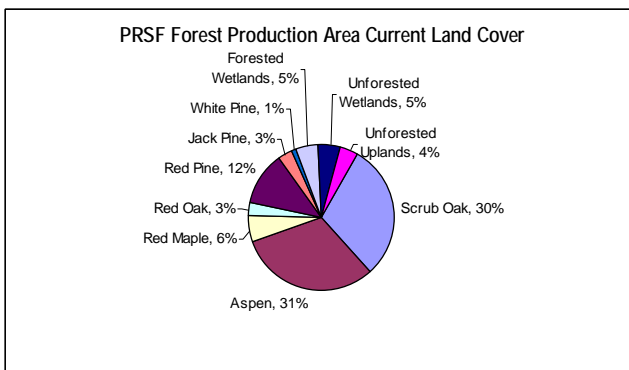
Area 3: Lake Lackawanna and Cedars	358 acres
Area 4: High Falls North	101 acres
Area 5: Johnson Falls	206 acres
Area 6: Caldron Falls	223 acres
Area 7: Kirby Lake	45 acres

Forest Production Land Management Classification

Area 1: Peshtigo River Flowages

This area is comprised of 6,095 acres. It includes most of the land surrounding the flowages of the Peshtigo River from Boat Landing 12 at the northwest corner of the forest to Highway 64 at the southeast corner of the forest. The flowages in this area are Caldron Falls, High Falls, Johnson Falls, and Potato Rapids. This area is a relatively narrow strip of flat, dry, land surrounding the flowages. Much of the land is near the water, public roads, recreational trails, or other recreational sites. Private land and seasonal residences are adjacent to much of this area. Due to the size and shape of the property, there are no large blocks of remote land.

Current and Future Land Cover



Summary

- 6,095 acres.
- Opportunity to manage for jack, red, and white pine.

Long Term Management Objectives (100 years)

- Maintain and enhance scenic qualities of the Peshtigo River and flowages.
- Protect, maintain, and improve the water quality and riparian habitat of the Peshtigo River and flowages.
- Maintain a diversity of forest cover types and ages for forest health, aesthetic appeal, and wildlife habitat.
- Increase white pine in suitable habitats.
- Maintain red oak, aspen, jack pine, and red pine cover types.
- Maintain scrub oak and red maple except in areas suitable for increasing white pine.

Short Term Management Objectives (50 years)

- Maintain a diversity of forest cover types and ages for the overall health of the forest, for aesthetic appeal, and provide wildlife habitat.
- Maintain the acreage of red oak.
- Reduce the total acreage of aspen by allowing natural conversion to white pine, red maple, and other species in the 200 foot zone.

- Decrease the acreage of scrub oak by naturally converting some acreage to white pine, aspen, or red maple, and actively converting some scrub oak acreage to red, jack, or white pine through planting.

Resource Management Prescriptions

Forest management on the Peshtigo River State Forest follow accepted forestry techniques practices. Due to the potential for high visibility of most forest management activities on the forest, efforts will be made to minimize the visual impact using aesthetic management techniques such as restricting the size of cuts, conducting partial harvests, retaining single trees or groups of trees, creating irregular or feathered harvest boundaries, controlling logging slash, planting trees, managing for longer lived species, harvesting during the winter, etc.:

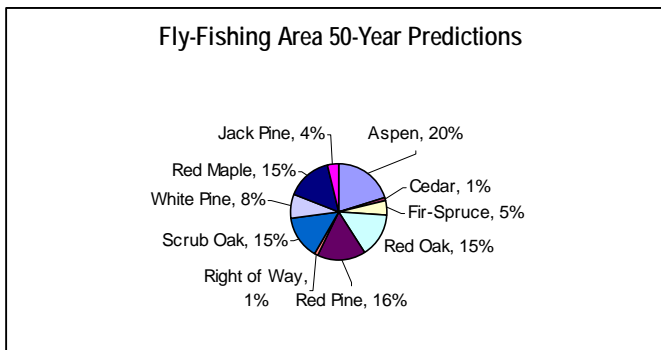
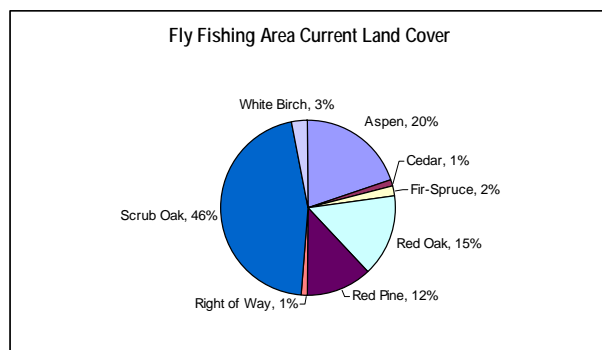
- Retain snags and coarse woody habitat whenever their retention does not conflict with other forest management objectives, including riparian areas.
- Increase the white pine acreage primarily through natural conversion and promote the growth and retention of large white pine trees.
- Comply with the Federal Energy Regulatory Commission requirements pertaining to the 200 foot zone as defined elsewhere in the master plan.
- Increase the acreage of red, jack, and white pines by converting areas of scrub oak to pines. Replacement by red pine or jack pine is influenced by a variety of factors including but not limited to: site suitability, visibility, and deer browse.

Forest Production Land Management Classification

Area 2: Fly Fishing Area

The Fly Fishing Area is comprised of 1,983 acres. This area includes all land downstream from Johnson Falls to the end of Spring Rapids, excluding that portion between the dam and the mouth of Medicine Brook which is designated as the Johnson Falls Native Community. Johnson Falls Road is the northwest boundary. This area is the only significant stretch of free flowing river on the Peshtigo River State Forest. Upstream, the flow of the river is regulated by dams and is maintained to imitate the natural fluctuations of the river, maintaining a relatively stable environment for aquatic species. The steep slopes of this valley are a sharp contrast to the flat topography found on much of the rest of the forest. Harvest in this area will be limited due to steep slopes, visual impact, and the Federal Energy Regulatory Commission zone.

Current and Future Land Cover



Summary

- 1,983 acres.
- Includes most of the state owned land downstream from Johnson Falls.
- Only significant stretch of free flowing river on the forest.
- Approximately 635 acres cannot be harvested in this area due to steep slopes, visual impact, and the Federal Energy Regulatory Commission zone.

Long Term Management Objectives (100 years)

- Protect and enhance scenic and water quality of the Peshtigo River and flowages.
- Manage the forest for a diversity of forest cover types and ages for forest health, aesthetic appeal, and wildlife habitat.
- Maintain red oak, aspen, jack pine, and red pine cover types.
- Increase white pine acreage.
- Maintain scrub oak and red maple acreage except as the opportunity exists to convert these stands to white pine.

Short Term Objectives (50 years)

- Maintain current levels of red oak.
- Maintain current levels of aspen.
- Decrease the acreage of scrub oak.
- Increase the total acreage of both red pine and jack pine by 4% of the total acreage of the forest production area.
- Increase the acreage of white pine.

Resource Management Prescriptions

Management actions in this area follow the General Management Prescriptions, as described in the beginning of the Land Management Section and all management activities are authorized, except as limited by the prescriptions below:

- Minimize, as practicable, the visibility of forest management activities from the river during the summer. Some aesthetic management techniques that may be used are: restricting the size of cuts, conducting partial harvests, retaining single trees or groups of trees, creating irregular or feathered harvest boundaries, controlling logging slash, planting trees, managing for longer lived species, harvesting during the winter, etc.
- Conduct passive management on areas too steep to harvest timber. These areas will be identified on a stand by stand basis whenever a timber harvest is proposed. It is estimated that 5% of the acreage of the Fly Fishing Area is too steep to harvest. These areas may also be ecologically and/or aesthetically sensitive sites.
- Retain snags and coarse woody habitat whenever their retention does not conflict with other forest management objectives, including riparian areas.
- Maintain the acreage of aspen by naturally converting some oak acreage to aspen. This is designed to compensate for aspen acreage that will succeed to other species due to some aspen stands being located in areas where aspen regeneration harvests are not possible (e.g. in the 200 foot wide Federal Energy Regulatory Commission Zone).

- Naturally convert scrub oak to white pine, aspen, or red maple where suitable and forcibly convert some scrub oak acreage to red, jack, or white pine. Replacement by red pine or jack pine is influenced by a variety of factors including but not limited to: site suitability, visibility, deer browse and competition from the current cover-type after harvest.

Alternatives Considered

Issue: Management Focus

Preferred Alternative: Forest Production Area

Other Alternative: Designate special forest management zones along the free-flowing portion of the river corridor based on slopes, hydrology, topography, and vegetation types. These zones would be given a special emphasis using passive management and allowing for natural regeneration and conversion in many areas. The goals would be to maintain an intact forested corridor that would provide for connectivity between forested blocks and minimize deer impacts to the area. Most of the declining aspen stands would be allowed to naturally convert to other longer-lived species and increasing the conifer component of the forest would be primarily through natural white pine regeneration where possible.

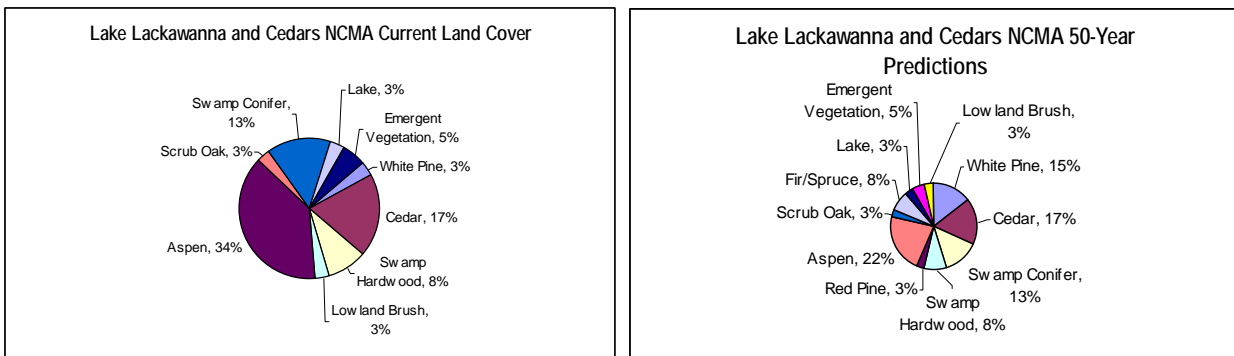
This alternative was not chosen because 1) it would not allow for maintaining current levels of aspen acreage for forest productivity and habitat for wildlife game species, 2) would result in a number of declining oak and aspen stands that would persist for several years and could be expected to be more susceptible to gypsy moth infestations, 3) would be less productive, 4) would not allow for establishing jack pine in this area, and 5) in areas dominated by aspen, losing the site to hazel brush competition for a period of time. As noted above, even with the proposed Forest Production emphasis, a large portion of this area will not be actively managed due to the steep slopes, visual impact, and the 200 foot Federal Energy Regulatory Commission zone.

Native Community Land Management Classification

Area 3: Lake Lackawanna and Cedars

This 358 acre site is comprised of a diverse mosaic of upland and wetland community types. The site features a small hard water drainage lake surrounded by several wetland types and an associated stream, as well as an extensive Northern Wet-mesic Forest dominated by 100 (+) year-old white cedar. Though the lake is entirely state owned, the main inlet passes through private land from Crandall Lake to the north. Two plants of Special Concern have been documented at this site in both wet and dry habitats.

Current and Future Land Cover



Summary

- This area is approximately 358 acres in size with 100% of it in state ownership.
- Opportunity to develop an older, dry-mesic closed canopy forest of longer lived species like white pine on the uplands while maintaining the diverse wetland community, including northern white cedar, on the lowlands.
- Protect and enhance rare species habitats, natural communities, and water quality.

Long Term Management Objectives (100 Years)

- Protect, maintain and enhance scenic and water quality of Lake Lackawanna, the Peshtigo River and its flowages.
- Manage for a mosaic of community types dominated by an older closed canopy forest of longer lived species such as white pine (on the uplands) and northern white cedar (on the lowlands).
- Protect and enhance rare species habitats and natural communities through active and passive forest management techniques.
- Provide opportunities for research, education and ecological interpretation.

Short Term Objectives (50 years)

- Perform forest management activities consistent with long term management goals.

Resource Management Prescriptions

The General Timber Type Management Prescriptions and all of their associated management activities (described at the beginning of the land management section) apply, except as limited by the prescriptions below:

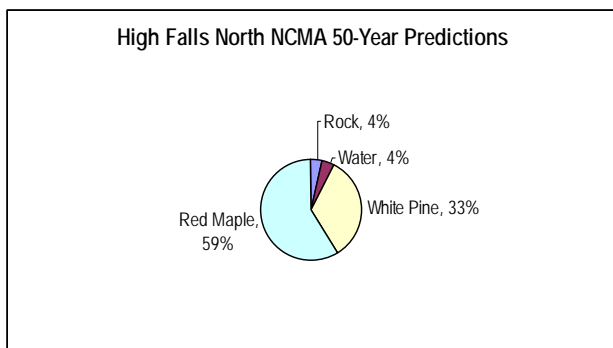
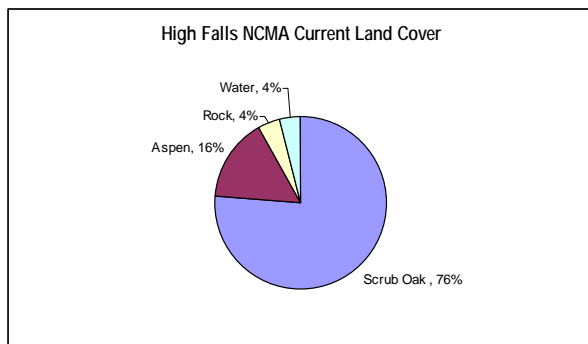
- Actively manage the uplands to favor white pine while maintaining structural and species diversity.
- Actively manage existing red pine plantations to create stands that look natural with large trees.
- Passively manage forested lowlands.
- Actively control beaver populations and mitigate the impacts of beaver damage if they negatively affect the cedar swamp(s).
- Continue to monitor for rare species, including the State Threatened Red-shouldered Hawk.

Native Community Land Management Classification

Area 4: High Falls North

This 121 acre (including 20 acres in private ownership) native community area is located on the northernmost end of High Falls Reservoir, just north of Old Veterans Lake Campground. It includes areas on both sides of the flowage and encompasses about one mile of shoreline. The major features are Bedrock Glades embedded within Northern Dry Forest and Northern Dry Mesic Forest, two forest types that are representative of this landscape. The Bedrock Glades have the potential to support rare plants. This area is hilly and contains numerous granite rock outcrops, both on the shoreline and farther inland. Most of the soils, with the exception of a few low lying pockets, are dry and sandy. A designated snowmobile trail runs through this area on the southerly side of the flowage.

Current and Future Land Cover



Summary

- 101 acres in state ownership.
- 20 acres privately owned.
- Opportunity to manage for bedrock glades and the unique communities they support.

Long Term Management Objectives (100 Years)

- Protect, maintain and enhance scenic and water quality of the Peshtigo River and flowages.
- Encourage a diversity of forest cover types and ages for forest health, aesthetic appeal, and habitat for a variety of wildlife species.
- Enhance structural and species diversity of the forest.
- Increase the conifer component of the forest, particularly white pine. Protect and enhance the bedrock glades and the unique communities they support.

Short Term Management Objectives (50 Years)

- Increase the conifer component of the forest, particularly white pine.
- Increase the red maple component of the forest.
- Decrease aspen and scrub oak.
- Allow for development of coarse woody habitat and snag trees.

Resource Management Prescriptions

Management actions in this area follow the General Management Prescriptions as described in the beginning of the Land Management Section and all management activities are authorized, except as limited by the prescriptions below:

- Protect the bedrock glades.
- Passively manage much of the site to allow the forest to transition to an uneven-aged multi-species forest.
- Use techniques such as partial cutting, where necessary. Portions of the glades could be kept in a mostly open condition with scattered large trees to favor light-demanding and intermediate glade and dry-forest/woodland associated plants.
- Minimize the visual impact of forest management activities such as timber harvesting.
- Increase white pine primarily through natural conversion and promote the growth and retention of large white pine trees.
- Decrease the amount of aspen and scrub oak by naturally converting to white pine and red maple.
- Retain snags and coarse woody habitat whenever their retention does not conflict with other forest management activities or present hazards.
- Utilize the Department of Natural Resources Old Growth Handbook (currently in preparation) for possible guidelines for managing older rotation mixed oak-pine stands.

Alternatives Considered

Issue: Boundary Modifications and Refinement

Preferred Alternative: Modify the original boundary from the biotic inventory's "Primary Site." Trimming the boundary in the northeast portion of the site to exclude an area that did not contain bedrock glades. The new boundary limits the area north of the river to the prominent bedrock features along the river.

Other Alternative: Keep the Biotic Inventory Primary Site boundary. This alternative was not chosen since the site would have included areas that were not consistent with the goals for this site.

Issue: Management Focus - Barrens Management

Preferred Alternative: Manage the site for an older, multi-species Northern Dry / Dry-mesic forest with increased proportions of red maple and conifers (favoring white pine) with high-quality bedrock inclusions.

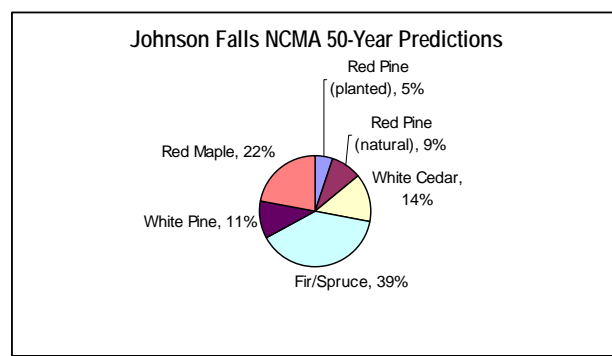
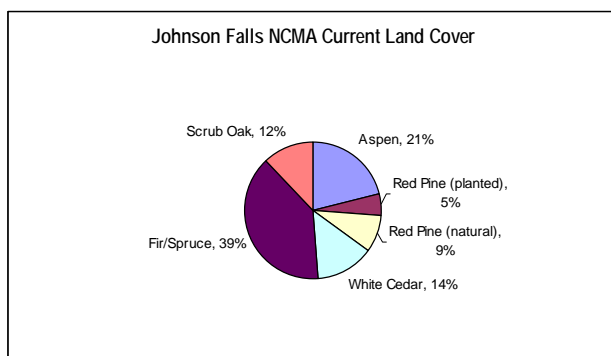
Other Alternative: Manage the site for barrens along with Northern dry forest. The alternative was not chosen due to the lack of opportunities for managing for high-quality barrens at this site.

Native Community Land Management Classification

Area 5: Johnson Falls

This area encompasses 251 acres (including 45 acres in private ownership) on both sides of the Peshtigo River from just below the Johnson Falls Dam to the mouth of Medicine Brook. This portion of the river flows through a narrow valley with steep slopes and gently rolling sand plains above the valley. The area is diverse and complex in terms of hydrology, topography, soils, and vegetation and supports a mosaic of good quality natural communities including Northern Dry-mesic Forest, Northern Wet-mesic Forest (cedar swamp), Bedrock Glade, a small Hardwood Swamp and inclusionary seeps, springs, and spring runs. Several rare plants and high-quality natural communities, as well as a State-Threatened animal are known from this site

Current and Future Land Cover



Summary

- 206 acres in state ownership.
- 45 acres in private ownership
- Opportunity to manage for high-quality community types and rare plants.

Long Term Management Objectives (100 years)

- Protect, maintain and enhance scenic and water quality of the Peshtigo River and flowages.
- Develop and maintain a forest with old growth characteristics.
- Protect rare species habitats and rare natural communities.
- Provide opportunities for research, education, and interpretation.

Short Term Management Objectives (50 years)

- Perform forest management activities consistent with long term management goals.

Resource Management Prescriptions

The General Timber Type Management Prescriptions and all of their associated management activities (described at the beginning of the land management section) apply, except as limited by the prescriptions below:

- Actively manage the red pine plantations to create stands with a more natural appearance and certain old growth characteristics, favoring natural conversion to long lived species such as white pine.
- Passively manage all areas that are not red pine plantations to allow for the development of white pine and other long-lived species, as well as increased coarse woody debris, standing snags, and tree age diversity.

Alternatives Considered

Issue: Location of boundaries

Preferred Alternative: Expand the original boundary (same as the Johnson Falls Dam “Primary Site” from the *Biotic Inventory*) to include all state owned lands which are west and north of the Medicine Brook up to the Johnson Falls Dam, and including all privately owned lands south of High Falls Road. This alternative is preferred because it includes all the lands that contain the high quality natural communities and associated species which are in need of special management.

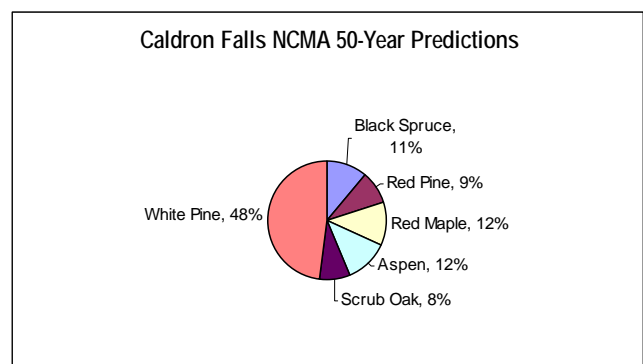
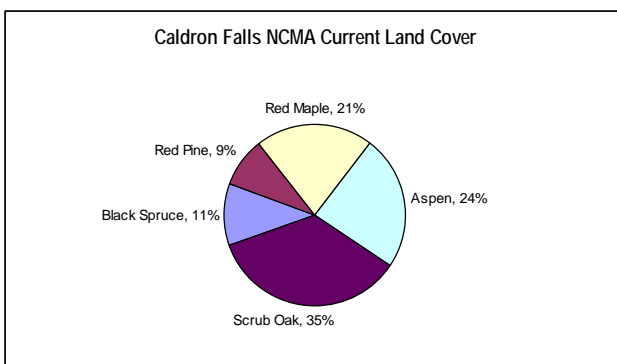
Other Alternative: Adopt the original boundary which was not inclusive enough.

Native Community Land Management Classification

Area 6: Caldron Falls

This 223 acre management area is located along the north shore of the Caldron Falls Reservoir and features a large block of Northern Dry-mesic Forest surrounding two shallow peaty depressions containing good quality Black Spruce Swamp. There is at least one Ephemeral Pond, a rare feature in the landscape, located within the site. This area represents one of the best opportunities on the PRSF and surrounding landscape to manage for a larger, contiguous block of intact Northern Dry-mesic Forest, which could benefit numerous species. The Black Spruce Swamps have good plant diversity that is representative of this type.

Current and Future Land Cover



Summary

- 223 acres, entirely in state ownership.
- Opportunity to maintain a forest mosaic with large, old trees representing later forest successional stages with high-quality wetland inclusions.
- Opportunity to manage for longer-lived species.

Long Term Management Objectives (100 years)

- Protect, maintain and enhance scenic and water quality of the Peshtigo River and flowages.
- Develop an older, closed canopy forest of longer lived species such as white pine on the uplands and both white pine and black spruce on the lowlands.
- Maintain black spruce stands.
- Protect rare species habitats and rare natural communities.
- Provide opportunities for research, education, and interpretation.

Short Term Management Objectives (50 years)

- Perform forest management activities consistent with long term management goals.
- Actively manage the uplands to favor long lived species such as white pine, moving towards a goal of an older closed canopy forest.

Resource Management Prescriptions

The General Timber Type Management Prescriptions and all of their associated management activities described at the beginning of the land management section apply, except as limited by the prescriptions below:

- Passively manage the black spruce depressions.
- Actively manage red pine plantations to create stands that look natural with large trees, grown to biological maturity, with the long term goal of natural conversion to a diverse forest that includes white pine as a major associate.
- Maintain a component of scrub oak for diversity and wildlife benefits.
- Actively manage aspen, red maple, oak, and swamp hardwood stands using techniques which promote natural conversion to white pine.

Alternatives Considered

Issue: Location of boundary.

Preferred Alternative: Adopt a boundary similar to the Caldron Falls Primary Site from the Biotic Inventory, except that the west line will be expanded to the east shoreline of Boat Landing 10 Bay, and the north boundary will be expanded slightly northward to the present property line.

Other Alternative: Adopt the original Caldron Falls Primary Site boundary without any changes. This was not adopted because it excluded some small areas to the west and north that logically should be included in the native community.

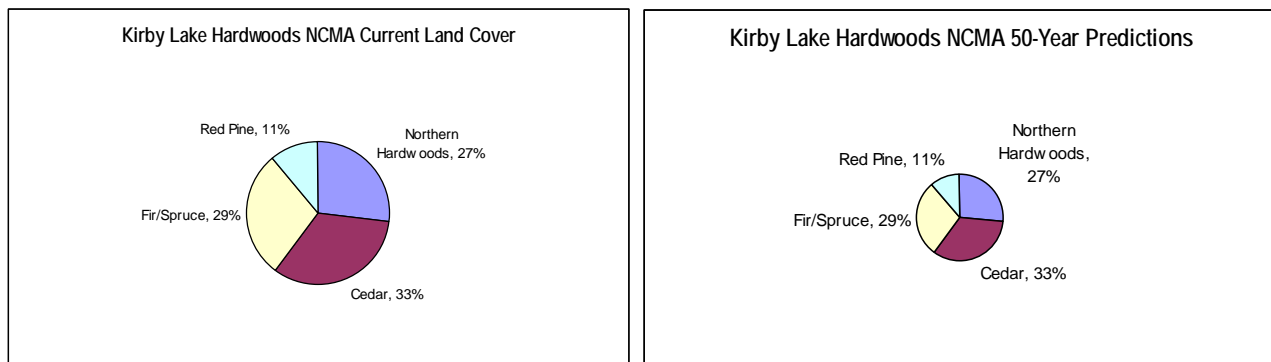
Other Alternative: Expand the original Caldron Falls Primary Site boundary to the west and north as described above, but shrink the east boundary slightly to the legal description line to make a hard boundary. This alternative was not chosen because it did not allow an adequate buffer on the east side for the black spruce swamp.

Native Community Land Management Classification

Area 7: Kirby Lake

This 45 acre proposed native community area is located along the west side of the Peshtigo River at the southernmost end of the Peshtigo River State Forest - just north of the Sandstone Flowage and approximately 0.3 miles east of Kirby Lake. The major features of this area are patches of Northern Wet-mesic Forest, mature rich Northern Mesic Forest, spring seepages, and four rare (Special Concern) plants. The cedar swamp has cedar regenerating in several size classes. The rich Northern Mesic Forest exists only on narrow bands of steep slopes in other areas of the forest and is rare in the Northeast Sands Ecological Landscape.

Current and Future Land Cover



Summary

- 45 acres.
- Small, but unique representation of Northern Wet-mesic forest and Northern Mesic Forest in the area.
- Opportunity to manage for cedar and other wet mesic species and communities.
- Opportunity to protect several rare plant species of Special Concern.

Long Term Management Objectives (100 years)

- Protect, maintain and enhance scenic and water quality of the Peshtigo River and flowages.
- Develop and maintain a forest with old growth characteristics.
- Maintain the unique hydrology throughout the site.
- Protect rare species habitats and rare natural communities.
- Provide opportunities for research, education, and interpretation.

Short Term Management Objectives (50 years)

- Perform forest management activities consistent with long term management goals.

Resource Management Prescriptions

- Passively manage this area to prevent soil disturbance and allow natural conversion to a forest with old growth characteristics.

Alternatives Considered

Issue: Management Focus

Preferred Alternative: Manage this site as a Native Community Management Area. Important features to protect include Northern Mesic Forest, Northern Wet-mesic Forest, and several rare plants.

Other Alternative: Include this site with the nearby Fly-fishing Area, utilizing similar management that is proposed for that site (currently an emphasis on forest production with aesthetic considerations). This was not chosen because it would not adequately address management considerations for this site.